



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,591	08/05/2003	Jurgen Behle	0137.00025	4812
22907	7590	12/06/2004		
BANNER & WITCOFF 1001 G STREET N W SUITE 1100 WASHINGTON, DC 20001			EXAMINER SHARP, JEFFREY ANDREW	
			ART UNIT 3677	PAPER NUMBER

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/633,591	BEHLE ET AL.	
	Examiner	Art Unit	
	Jeffrey Sharp	3677	<i>My</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 05 August 2003.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-11 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-11 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 05 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some * c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____

DETAILED ACTION

Status of Claims

- [1] Claims 1-11 are pending.

Claim Objections

- [2] Claim 1 objected to because of the following informalities:

Claim 1, contains the recitation "*the latter*" (line 10). Applicant is urged to replace with the flange.

Claim 6, "*3entirely*" (line 2) should be entirely.

Claim 8, there is no reference to a region of the flange that is covered by the sealing washer in independent claim 1. Clear antecedent basis for a covered region of the flange is needed.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

- [3] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- [4] Claims 1-6, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al. US-6,443,678 in view of Benoit US-5,301,396.

Mizuno et al. discloses: a plastic nut to be fitted to a component (12) having an aperture (13), which, with a nut piece (1) serving to hold a screw (11), can be plugged into the aperture (13) and which, in order to bear on one side (upper 12, Col 2 line 31) of the component (12), is provided with a flange (3) which has a through hole (inside 2) for the screw (11) and, on its side facing the component, has a sealing washer (3a integral to grommet) and, in order to bear on the other side (lower 12) of the component (12), is provided with snap-action hooks (5) which, after insertion, spread out as the screw (11) is tightened in the accommodation hole in the plastic nut and therefore secure the plastic nut to the component (12), characterized in that the sealing washer (3a integral to grommet) has at its outer rim a shoulder which encloses the flange (3) and merges into a collar (4) which projects into the through hole. Mizuno et al. further teaches a blind hole in the nut piece.

*Note that Mizuno et al. discloses a two-piece sealing washer (Figure 4); but teaches expressly the improvement of making the sealing washer integral with the grommet (i.e., nut piece) to eliminate assembly time and cost (Col 1 lines 29-33). This does not depart far from the scope of the instant invention, which calls for a similar sealing washer to be injection over-

molded either completely or partially onto the nut piece (claim 11), yielding the same general structure taught in Mizuno et al. Figure 1. Mizuno et al. also teaches the collar (4) to be compressible so as to seal against the thread of the screw (Col 2 lines 37-42) when tightened.

However, Mizuno et al. fails to disclose expressly a *separate* integral sealing washer having a **beveled shoulder**, **sealing lip**, **ring** projecting into the aperture, and sealing means partially **covering** the flange.

Benoit teaches: a fastening device comprising a *separate* integral sealing washer (114, Figure 10), in order to bear on a top side of a component (26), characterized in that the sealing washer (114) has at its outer rim a **tapered shoulder** (152) which **encloses**, and is beveled to mate with the flange (138) said bevel providing better alignment. The shoulder of the sealing washer merges into a **sealing lip** (156) at its outer edge to provide an improved annular bearing and sealing surface. Benoit further teaches a **ring** (bottom of 154) that projects into the aperture (24) of the component (26) to seal between the fastening device and component aperture. Note that the sealing washer (114) comprises a compressible spacer (112) that connects the flange (138) to the nut piece (pertinent to instant claim 9).

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the sealing washer taught by Mizuno et al. to comprise the aforementioned sealing washer features taught by Benoit, in order to provide: 1) the aforementioned advantages of the sealing washer features, 2) an improved water-tight seal, 3) reduced vibration and rattling of the fastener in applications such as automotive, 4) reduced noise (i.e., damping) between panels, and/or 5) more frictional contact surface area between panel, nut, component, and screw.

As for claims 2 and 3, Benoit shows the inner side of the plastic nut's shoulder to be beveled in such a way that its thickness decreases in the direction away from the flange (152), and mates with a corresponding flange bevel (138).

[5] Claims 1, 4, 6, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al. US-6,443,678 in view of Cordola et al. US-5,173,026.

Mizuno et al. discloses: a plastic nut to be fitted to a component (12) having an aperture (13), which, with a nut piece (1) serving to hold a screw (11), can be plugged into the aperture (13) and which, in order to bear on one side (upper 12, Col 2 line 31) of the component (12), is provided with a flange (3) which has a through hole (inside 2) for the screw (11) and, on its side facing the component, has a sealing washer (3a integral to grommet) and, in order to bear on the other side (lower 12) of the component (12), is provided with snap-action hooks (5) which, after insertion, spread out as the screw (11) is tightened in the accommodation hole in the plastic nut and therefore secure the plastic nut to the component (12), characterized in that the sealing washer (3a integral to grommet) has at its outer rim a shoulder which encloses the flange (3) and merges into a collar (4) which projects into the through hole. Mizuno et al. further teaches a blind hole in the nut piece.

*Note that Mizuno et al. discloses a two-piece sealing washer (Figure 4); but teaches expressly the improvement of making the sealing washer integral with the grommet (i.e., nut piece) to eliminate assembly time and cost (Col 1 lines 29-33). This does not depart far from the scope of the instant invention, which calls for a similar sealing washer to be injection over-molded either completely or partially onto the nut piece (claim 11), yielding the same general

structure taught in Mizuno et al. Figure 1. Mizuno et al. also teaches the collar (4) to be compressible so as to seal against the thread of the screw (Col 2 lines 37-42) when tightened.

However, Mizuno et al. fails to disclose expressly a *separate* integral sealing washer having a **sealing lip**, and sealing means partially **covering** the flange.

Cordola et al. teaches a *separate* sealing washer (14), that is integral with a plastic grommet-type fastener, said washer having a **sealing lip** (15), and a **shoulder** (14) projecting beyond the thickness of a flange (12b), in order to provide a sealing surface on both sides of the flange adjacent the components or panels (Figure 6). Cordola et al. further teach a ring (16) that could project into an aperture (20) of a component (18) for better sealing in between the nut piece and component aperture. One advantage of **over-molding** the sealing washer is shown in Col 1 lines 49-50.

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the sealing washer taught by Mizuno et al. to comprise the aforementioned sealing washer features taught by Cordola et al., in order to provide: 1) the aforementioned advantages of the sealing washer features, 2) an improved water-tight seal, 3) reduced vibration and rattling of the fastener in applications such as automotive, 4) reduced noise (i.e., damping) between panels, and/or 5) more frictional contact surface area between panel, nut, component, and screw. The advantages achieved by over-molding the sealing washer onto the plastic nut includes: 1) eliminating the possibility of separation, 2) eliminating the manufacturing step of placing the sealing washer on the plastic nut prior to insertion, and/or 3) allowing the sealing washer to comprise the spacer.

Art Unit: 3677

[6] Claims 1, 4, 6, 7, and 9-11 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al. US-6,443,678 in view of Sturies et al. US-6,315,510.

Mizuno et al. discloses: a plastic nut to be fitted to a component (12) having an aperture (13), which, with a nut piece (1) serving to hold a screw (11), can be plugged into the aperture (13) and which, in order to bear on one side (upper 12, Col 2 line 31) of the component (12), is provided with a flange (3) which has a through hole (inside 2) for the screw (11) and, on its side facing the component, has a sealing washer (3a integral to grommet) and, in order to bear on the other side (lower 12) of the component (12), is provided with snap-action hooks (5) which, after insertion, spread out as the screw (11) is tightened in the accommodation hole in the plastic nut and therefore secure the plastic nut to the component (12), characterized in that the sealing washer (3a integral to grommet) has at its outer rim a shoulder which encloses the flange (3) and merges into a collar (4) which projects into the through hole. Mizuno et al. further teaches a blind hole in the nut piece.

*Note that Mizuno et al. discloses a two-piece sealing washer (Figure 4); but teaches expressly the improvement of making the sealing washer integral with the grommet (i.e., nut piece) to eliminate assembly time and cost (Col 1 lines 29-33). This does not depart far from the scope of the instant invention, which calls for a similar sealing washer to be injection over-molded either completely or partially onto the nut piece (claim 11), yielding the same general structure taught in Mizuno et al. Figure 1. Mizuno et al. also teaches the collar (4) to be compressible so as to seal against the thread of the screw (Col 2 lines 37-42) when tightened.

However, Mizuno et al. fails to disclose expressly a *separate* integral sealing washer having a **beveled shoulder, sealing lip**, and sealing means partially **covering** the flange.

Sturies et al. teaches: a fastening device comprising a separate but integral sealing washer (10), in order to bear on a top side of a component (14), characterized in that the sealing washer (10) has at its outer rim a **shoulder** which **encloses**, and is beveled to mate with the flange (16). The shoulder of the sealing washer merges into a **sealing lip** (12) at its outer edge facing the component (14) to provide an improved annular bearing and sealing surface. Sturies et al. further teaches the sealing washer (10) to project beyond the flange (16).

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the sealing washer taught by Mizuno et al. to comprise the sealing lip feature taught by Sturies et al., in order to provide: 1) an improved water-tight seal via an axially-stressed bearing surface, 2) reduced vibration and rattling of the fastener in applications such as automotive, 3) reduced noise (i.e., damping) between panels, 4) expansion and compression of the sealing washer during screw insertion for an improved pressure fit, and/or 5) more frictional contact surface area between panel, nut, component, and screw.

[7] Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al. US-6,443,678 in view of Mills et al. US-2,872,961.

Mizuno et al. discloses: a plastic nut to be fitted to a component (12) having an aperture (13), which, with a nut piece (1) serving to hold a screw (11), can be plugged into the aperture (13) and which, in order to bear on one side (upper 12, Col 2 line 31) of the component (12), is provided with a flange (3) which has a through hole (inside 2) for the screw (11) and, on its side facing the component, has a sealing washer (3a integral to grommet) and, in order to bear on the other side (lower 12) of the component (12), is provided with snap-action hooks (5) which, after

Art Unit: 3677

insertion, spread out as the screw (11) is tightened in the accommodation hole in the plastic nut and therefore secure the plastic nut to the component (12), characterized in that the sealing washer (3a integral to grommet) has at its outer rim a shoulder which encloses the flange (3) and merges into a collar (4) which projects into the through hole. Mizuno et al. further teaches a blind hole in the nut piece.

*Note that Mizuno et al. discloses a two-piece sealing washer (Figure 4); but teaches expressly the improvement of making the sealing washer integral with the grommet (i.e., nut piece) to eliminate assembly time and cost (Col 1 lines 29-33). This does not depart far from the scope of the instant invention, which calls for a similar sealing washer to be injection over-molded either completely or partially onto the nut piece (claim 11), yielding the same general structure taught in Mizuno et al. Figure 1. Mizuno et al. also teaches the collar (4) to be compressible so as to seal against the thread of the screw (Col 2 lines 37-42) when tightened.

However, Mizuno et al. fails to disclose expressly a *separate* integral sealing washer having a **ring** that projects into the aperture.

Mills et al. teaches a **ring** (26) on a seal washer (8) to seal against BOTH a threaded fastener (30) and a work surface (64,10) for better sealing.

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the sealing washer taught by Mizuno et al. to comprise the "ring-in-aperture" feature taught by Mills et al., in order to provide: 1) an improved water-tight seal between a threaded shank and a body after tightening, 2) reduced vibration and rattling of the fastener in applications such as automotive, 3) reduced noise (i.e., damping) between panels, 4) expansion and

compression of the sealing washer during screw insertion for an improved pressure fit, and/or 5) more frictional contact surface area between panel, nut, component, and screw.

[8] Claims 4, 5, and 7 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al. US-6,443,678 in view of Benoit US-5,301,396 as discussed above, in further view of Wollar US-4,832,551.

Mizuno et al. v. Benoit discloses all of the limitations of the instant claim 1 as discussed above, including a collar portion that projects past the flange; however, fails to disclose expressly a **two-piece** nut piece and sealing washer, having a collar on the sealing washer that projects beyond the flange.

Wollar teaches a collar (64) on a *separate* sealing washer that provides sealing between the aperture and screw as the screw is tightened. The collar is advantageous, because it forms a compression fit against the screw thread and nut piece creating an improved seal. The sealing washer similarly has a rim (66) and tapered sealing lip (62), is inserted through the aperture (19) of a component (18), and deforms to enable an improved seal between the aperture and screw threads (Col 5 lines 17-20). The collar (64) may be inserted into an aperture (19) of a component (10) as shown, thereby satisfying the limitation set forth in the instant claim 5.

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the collar taught by Mizuno et al. v. Benoit as a matter of design choice, to be on a separate sealing washer, in order to provide the same sealing function of collar taught by Mizuno et al. v. Benoit. The Applicant has provided no evidence that the disclosed collar limitation in the instant claim 7 provides any solution or solves any stated problem shown by Mizuno et al or

Art Unit: 3677

Wollar. Further, the collar serves the same purpose of creating a seal between a screw, aperture, and nut piece, whether the sealing washer is integral with the nut piece (as shown by Mizuno et al.), or separate (Wollar). Either Wollar or Mizuno et al. would have been expected by those of ordinary skill in the art to perform the same general sealing function (between screw threads and nut piece or between screw threads and component aperture).

[9] Claims 6, 8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al. US-6,443,678 in view of Benoit US-5,301,396 as discussed above in further view of Ueno US-5,846,040

Mizuno et al. v. Benoit discloses all of the limitations of the instant claim 1 as discussed above; however, fails to disclose expressly **projections** on the flange.

Ueno teaches **projections** (26) on the flange having a molded-on seal. The advantages of these projections include: 1) anti-rotational resistance during screw insertion, 2) an increased 'zig-zag' path of resistance for a fluid, 3) helping to force some seal washer material into the aperture and around the screw, and/or 4) to give more surface (frictional) area for optimal injection over-molding (to prevent separation of the sealing washer from the nut piece). Ueno also teaches the molded on seal to partially enclose the flange (Figure 8), and to project beyond the flange (Figure 10).

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the flange taught by Mizuno et al. v. Benoit, to comprise the projections taught by Ueno, in order to achieve any of the aforementioned advantages above.

Conclusion

[10] The prior art made of record and not cited above that is considered pertinent to applicant's disclosure is as follows:

US-4,875,818 Reinwall shows projections on the flange.

US-4,948,314 Kurosaki shows projections on the flange.

US-5,857,244 Edwards et al. shows projections on the flange.

US-5,217,337 Junemann et al. teaches a sealing washer and nut piece (Figure 3) having the limitations shown in the instant claims 2, 4, and 5.

US-3,534,797 Reinhard (Figure 3) teaches a blind nut piece and sealing washer having the limitations shown in the instant claims 4-6, and 11.

US-5,636,953 Jaeger et al. teaches a sealing washer having the limitations found in the instant claims 5, 6, 9, and 11.

US-2004/0156694 Behle et al. (Applicant) shows a similar nut piece having a flange.

US-3,131,742 Munse teaches a sealing washer having a shoulder (17) that extends beyond a nut piece flange (10), in order to be used in a reversible manner, but could be used to provide sealing on both sides.

US-6,560,819 Mizuno et al. teaches a similar water-proof grommet having a sealing washer.

US-4,041,834 Herkes et al. teaches over-moulding a seal on a flange, having a sealing lip (34) as shown in the instant claim 4.

US-6,264,393 Kraus shows sealing washer used on a flange of a blind nut piece having protrusions (instant claim 8), said washer having a sealing lip (28), shoulder, and partially surrounding the flange as discussed in the instant claim 6.

US-5,738,476 Assimakopoulos teaches a fastener of the prior art having a sealing washer.


US-3,910,588, US-4,712,802, US-4,092,896, and US-5,906,463 show sealing washers having some of the limitations disclosed by Applicant.

[11] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Sharp whose telephone number is (703) 305-2693. The examiner can normally be reached on 7:30 am - 5:00 pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J.J. Swann can be reached on (703) 306-4115. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAS


ROBERT J. SANDY
PRIMARY EXAMINER